

Safety Performance in Construction Industry in Dharmapuri Town

Arun Asokan^{*}, Amayou Nigussie, Manaye Mosiye, Elangovan B

Bule Hora University, Bule Hora, West Guji, Ethiopia

Corresponding Author:*

Abstract—Although safety management is known to be vital to construction projects, very few studies have solicited views from construction practitioners about their perceptions of which safety management practices (SMPs) are important to construction projects and related to project performance. The suggestion is to improve the safety performance on the construction sites. The government should follow up the safety performance by visiting the construction sites and the insurance company should be more active in visiting the construction sites. The current study focus on site data's collection from the contractors, consultant, and owners by using questionnaire to evaluate the safety performance in the construction sites. In total, there were 40 questionnaires which were distributed to respondents with a response rate of 100%. The results show that there was still a lack of commitment from the government, the insurance company, the labour ministry, the owners, consultants, and also the contractors to improving safety performance on the construction sites.

Keywords— construction, safety, SMP.

I. INTRODUCTION

In the developed as well as developing part of the world, construction industry is considered to be one of the most significant industries in terms of its impact on health and safety of the working population. Construction industry is both economically and socially important.

The major causes of accidents are related to the unique nature of the industry, human behaviour, difficult work site conditions, and poor safety management, which result in unsafe work methods, equipment and procedures. Emphasis in both developing and developed countries needs to be placed on training and the utilization of comprehensive safety programs.

II. LITERATURE REVIEW

Yousif Salam Saeed et al. (2017) [1]. In his study he suggested that the organizations should be more take care about H&S of their construction teams to minimize construction risks to an acceptable value. Companies should prepare employees before starting construction work and provide them with relevant information to identify risks to avert risks on their Health & Safety. Contractors should encourage workers to follow Health & Safety instructions. Moreover, organizations through worker supervisors can reduce Health & Safety risks by providing worker supervisors for each team/ group of workers engaged in different places within the same projects, especially in large projects. The worker supervisors should have sufficient experience and

knowledge to encourage the workers to carry out their works safely.

Kashiwagi (2004)[3] in his research in the USA proposed that quality performance and safety issues are not a construction or engineering issue, but a business issue of supply and demand. This \$4 million research programme at Arizona University provides evidence that the owner (and not the construction industry) has more impact on the level of construction performance. It concludes that the relationship between the owner's approach to construction and the level of performance (quality and safety, on time, and on budget) is driven by the ability of the owner to efficiently demand performance. If the owner out sources construction properly, by passing the risk of performance to the contractor, the contractor is more likely to send highly trained personnel who can perform on the project (and who are safe). The construction industry's performance has shown that when the owner identifies minimum standards, contractors have supplied the minimum level of performance. This research shows that when the owner properly identifies and demands performance through correct outsourcing, the level of performance of construction is extremely high.

McDonald & Hrymak (2002)[2] stated that it is too easy to comply with legal requirements through having a paper system, which does not effectively operate in practice. This report argues that safety management systems should be audited to assess the effectiveness of

safety management systems; the duties of the safety officer should be strengthened, while operational management of health & safety should be measured and held accountable. They showed the strongest relationship with safety compliance. They recommend that all sites should have a safety representative and their role and functions should be reinforced as part of the safety management system.

Brabazon et al, (2000)[4] in his paper mentioned that incidents of life threatening respiratory diseases in the construction industry for the period between 1996 and 1999 are estimated to be about 200 to 300 per annum. When compared to the total number of fatal injuries due to accidents in construction industry over the same time period and allied to the probable under reporting of occupational ill health, the number of fatalities in the construction industry due to ill health probably exceeds those due to injury.

Langford et al. (2000)[5] in their studies found that when employees believe that the management cares about their personal safety, they are more willing to cooperate to improve safety performance.

III. OBJECTIVES AND METHODOLOGY

- 1) To realize the real safety problems that occurs in construction industry
- 2) To assess any factors that predicts good safety performance.
- 3) To assess any patterns or trends in safety management in Constructionists.
- 4) To make recommendations to the construction on industry based on the Results.

METHODOLOGY

- 1) Collection of Literatures
- 2) Site Visits.
- 3) Questioner preparation and distribution to clients, Contractors, Owners and Engineers.
- 4) Based on Score, Data is analysed through Microsoft Excel
- 5) Recommendations and Conclusions.

IV. QUESTIONER SURVEY

SCAFFOLDING

The observational items that were measured under this category were

- 1) Scaffolding on sound footing
- 2) Base-plate & sole boards
- 3) Platforms properly supported
- 4) Scaffold tied properly

- 5) Ladder access provided

HOUSEKEEPING

The observational items that were measured under this category were:

- 1) Scaffold base free of rubbish
- 2) Lifts free of rubbish
- 3) Materials stored neatly & safely
- 4) Access routes & stairways rubbish free

PERSONAL PROTECTION EQUIPMENT

The observational items that were measured under this category y were:

- 1) Workers wearing safety footwear
- 2) Workers wearing safety helmets
- 3) Workers wearing Ear Protection.
- 4) Workers fall arrest equipment worn where appropriate

V. RESULTS& DISSCUSION

RESPONSE AMONG THE OFFICIALS

There are five most popular and efficient construction companies are participated in the questionnaire. All these companies are located in and around the Dharmapuri town. They are SWASTIK Construction PVT,ARTIC Engineers PVT,OM SAKTHI Constructions, BALAJI GREEN Buildings, VETRI Constructions. Participated in the questionnaire are four types of the respondents such as Owners, contractors, consultants, and engineers 40 questionnaires have been distributed and the response rate is 30 % of the Contractors, and 22% of consultants, and 10% of the Owner, and 38% of Engineers, response rate among respondents. All the Type of the respondents executed many projects at the last three years.

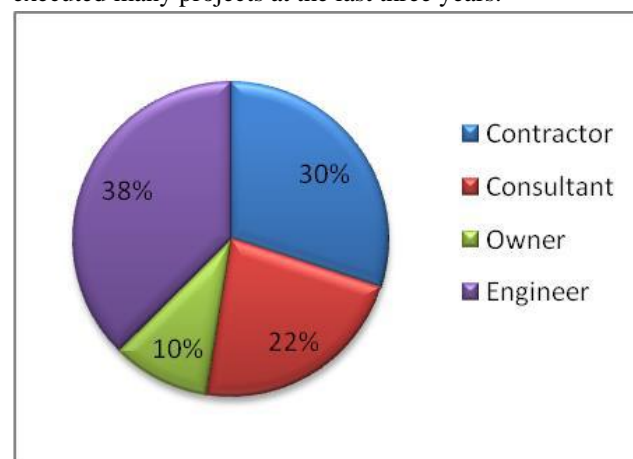


Fig.1

Scaffolding Braced properly

Out of 40(100%) respondents, 5(12.5%) respondents mention that Scaffolding braced properly are in excellent condition, 16(40%) respondents mention that Scaffolding

braced properly are in good condition, 9(22.5%) respondents mention that Scaffolding braced properly are in fair condition, 7(17.5%) respondents mention that Scaffolding braced properly are in Poor condition, and 3(7.5%) respondents are mentioned no.

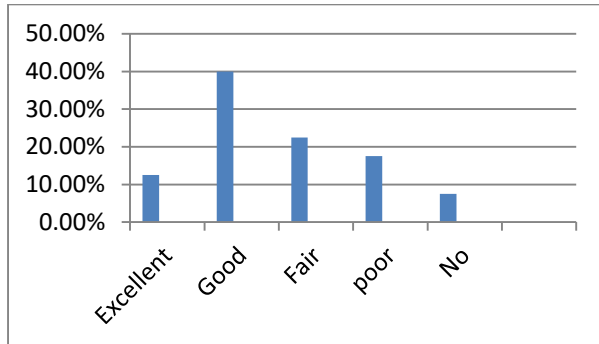


Fig.2

Scaffold lifts Free of Rubbish

Out of 40(100%) respondents, 6(15%) of respondents mentioned that Scaffold lifts are free of rubbish are Excellent, 14 (35%) of respondents mentioned that Scaffold lifts are free of rubbish are good, 8(20%) of respondents mentioned that Scaffold lifts are free of rubbish are fair, 8(20%) of respondents mentioned that Scaffold lifts are free of rubbish are Poor, 1(2.5%) of respondents mentioned that scaffold lifts are free of rubbish are worst, 3(7.5%) of respondents mentioned no.

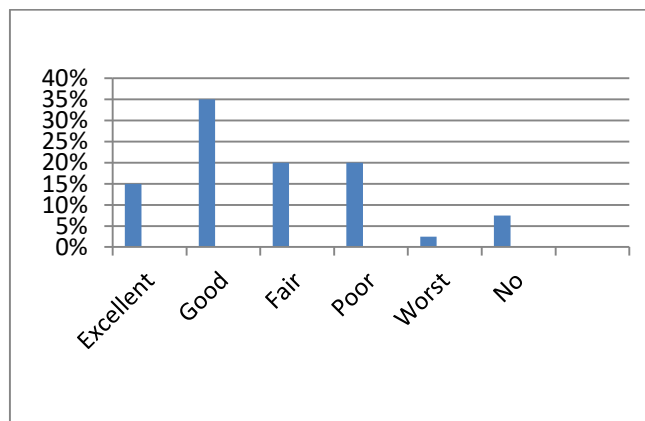


Fig.3

Eye Protection

Out of 40(100%) respondents, 6(15%) of respondents mentioned that All are wearing eye protection is Excellent, 4(10%) of respondents mentioned that All are wearing eye protection is good, 11(27.5%) of respondents mentioned that All are wearing eye protection is fair, 8(20%) of respondents mentioned that All are wearing eye protection is Poor, 3(7.5%) of respondents mentioned that All are wearing eye protection is Worst, 8(20%) of respondents mentioned no.

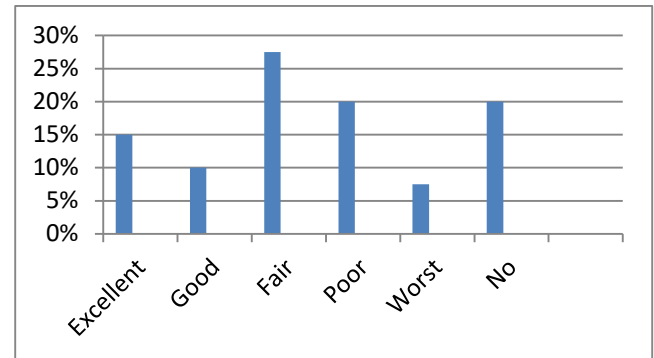


Fig.4

VI. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

From this Thesis it is noted that there was no detailed record for the size and number of accidents, as the data available only showed the real injuries. Management carelessness, lack of safety officer and safety culture were the main reasons contributed to the increase of rate of accidents in the construction sites.

Several recommendations are suggested here on the role of each party involved in construction projects, including the insurance companies, the owners, the Consultants and the contractors.

THE INSURANCE COMPANIES

The insurance companies should visit construction sites to monitor the safety.

THE OWNERS

The owners should control and mentor the contractors and consultants by giving safety training to workers, promoting safety culture in the construction site and by making sure that the consultants inspect the safety of the tools used in the construction sites.

THE CONTRACTORS

The contractors should train the workers, promote the safety culture for workers and educate them on how to avoid the risk and use the equipment properly in the construction site.

The contractors should prepare the regular safety meeting during the work in the construction site.

REFERENCES

- [1] Yousif Salam Saeed, (2017), Safety Management in Construction Projects, Journal of University of Duhok, Vol.20, No.1, pp 546-560.
- [2] Kashiwagi, D., Savicky, J. (2004) Quality and Safety in Construction is a Supply and Demand Issue. Construction Information Quarterly, 6, (1) 17.

- [3] Mc Donald. N. &Hrymak .V. et al (2002) Safety Behaviour in the Construction Sector. Contract Research Report, Health and Safety Authority and Health and Safety Executive, Northern Ireland
- [4] Brabazon, P. Tipping, A., Jones, J., (2000) Construction health and safety for the new millennium, Health and Safety Executive, Contract Research Report 313/2000.
- [5] Langford, D., Rowlinson. &Sawacha, E. (2000). Safety behaviour and safety management: Its influence on the attitudes of workers in the UK construction industry. *Engineering Construction and Architectural Management*, 7 (2), 133-141.